

General Aviation

Requirements

Requirement ID: 614
Requirement

Status Category: Completed

Sponsor Organization: ACE

Sponsor POC: Frank Bick

Keywords: General Aviation Pilots (GA), Performance (meas/imprv), Vision

Title: Pilot field-of-vision capabilities/limitations

Research Statement:

The research objectives of this requirement is to develop human factors recommendations to assist in alleviating pilot error and increased pilot workload created by non-standard installations of avionics devices and other cockpit equipment in general aviation aircraft. The research will provide pilot field-of-vision limitations for design considerations.

Background:

Update of field-of-view data with the express purpose of defining display location boundaries that correspond to established design eye positions for GA aircraft. Existing guidance is based upon the head held in an erect fixed position, which is not representative of actual operation. New data needs to be generated based upon realistic head position. Also data must be gathered in a context of actual operational tasks and constraints, to address more than just physiological considerations. Degraded modes of operation should also be considered. This research is sorely needed to provide human factors recommendations to assist in alleviating pilot error and increased pilot workload created by non standard installations of avionics devices and other cockpit equipments.

Output:

A reduction in pilot error and alleviation of pilot workload resulting from improved installation considerations of and interaction with various cockpit devices.

Regulatory Link:

a. AOA (FAA) Strategic Plan (1998-2003)-Mission Goal: Safety. Supports the DOT Strategic Goal of Safety. Key Strategies include Research to study issues and technologies (especially Human Factors) to improve policies, procedures and equipment(pg.13). It also supports the Focus

Area of Accident Prevention by addressing Flight crew/vehicle interface and interaction issues (pg. 15)b. FAA FY2000 Performance Plan-Reduce the General Aviation Fatal Accident Rate.c. AVR Performance Plan-Goal Targeting Performance Areas "Contribute to aviation safety by developing policies and/or standards, programs, and systems to reduce the number of aviation accidents and incidents related to Human Factors."